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Optimal geometrical parameters of trihedral steel support's cross section

Badertdinov I., Kuznetsov I., Kashapov N., Gilmanshin I., Sabitov L.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© Published under licence by IOP Publishing Ltd. The article deals with steel triangular lattice towers with a triangular or diagonal bars for the construction of supports of transmission lines, poles wind generator installations, supports for the placement of lighting equipment. For these constructions have become consumption depends on the geometric parameters of cross-section. Therefore, to reduce the consumption of steel must be assigned the optimal value of parameters such as the height of the cross-section, angle braces. For these supports, an analytical expression of the masses. From the condition of a minimum weight of a formula for determining the optimal height of the cross-section triangular lattice towers. the equations and the graphs allow to determine these parameters to determine the optimal tilt angle braces and supports a triangular lattice truss. The value of the optimal angle for the supports with a triangular lattice is αopt = 68°, and for bearings with diagonal bars αopt = 63°.

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